

CLAIMS

1. A data structure encoded on a surface of an object, said data structure comprising a plurality of block data regions, each of said block data regions including:

an encoded data region containing data in encoded form;

a clock mark structure located adjacent a first peripheral portion of said encoded data region; and

a target structure located adjacent said clock mark structure;

wherein each of said block data regions further includes an orientation data structure indicative of an orientation of said data structure.

2. A data structure as claimed in claim 1, wherein said orientation data structure is an elongate data region including a plurality of data points corresponding to a first value.

3. A data structure as claimed in claim 2, wherein said clock mark structure includes a first elongate region of data points corresponding to a first value and an adjacent second elongate region of alternating first and second data points corresponding to respective alternating first and second values, said clock mark structure defining an edge of said encoded data region.

4. A data structure as claimed in claim 3, wherein a first clock mark structure is located adjacent a first edge of said encoded data region and a second clock mark structure is located adjacent a second opposite edge of said encoded data region.

5. A data structure as claimed in claim 1, wherein said target structure comprises a plurality of first data points, each said first data point corresponding to a first value, and a plurality of second data points corresponding to a second value different to said first value.

6. A data structure as claimed in claim 5, wherein said target structure further includes a target number indicator structure comprising a contiguous group of said second data points, said target number indicator

structure being indicative of a target identification number associated with said target structure.

7. A data structure as claimed in claim 1, wherein said data structure comprises a series of dots printed on a surface of a substrate.

8. A method of decoding a data structure encoded on a surface of an object, said data structure comprising a plurality of block data regions, each of said block data regions including:

an encoded data region containing encoded data;

a series of clock mark structures located adjacent said encoded data region; and

a plurality of identifiable target structures located adjacent said series of clock mark structures;

the method comprising the steps of:

(a) scanning said data structure;

(b) locating the start of said data structure;

(c) locating said target structures and determining the orientation of said target structures;

(d) locating said clock mark structures based on the position of said target structures;

(e) utilising said clock mark structures to determine an expected location of bit data of said encoded data region; and

(f) determining a data value for each bit of said bit data.

9. A method as claimed in claim 8, wherein said clock mark structures include a first elongate region of first data points corresponding to a first value and an adjacent second elongate region of alternate second and third data points, said second data points corresponding to the first value and said third data points corresponding to a second value different to the first value, said second region being located adjacent an edge of said encoded data region, and wherein said utilising step (e) comprises the steps of utilising a pseudo phase locked loop type algorithm to maintain a current location within said clock mark structures.

10. A method as claimed in claim 9, wherein said determining step (f)

comprises the step of dividing a sensed bit value into three contiguous regions comprising a middle region, a lower region and an upper region, and:

with each value in a lower region, designating the corresponding bit value to be a first value;

with each value in an upper region, designating the corresponding bit value to be a second value; and

with each value in a middle region, utilising the spatially surrounding values to determine whether said value in the middle region is a first value or a second value.